

# Water law and water scarcity in North Carolina and other states

## A Briefing for the NC General Assembly's Environmental Review Commission

By the Principal Investigators of the ERC's Water Allocation Study  
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Institute for Environmental Policy Solutions  
Nov. 9, 2011



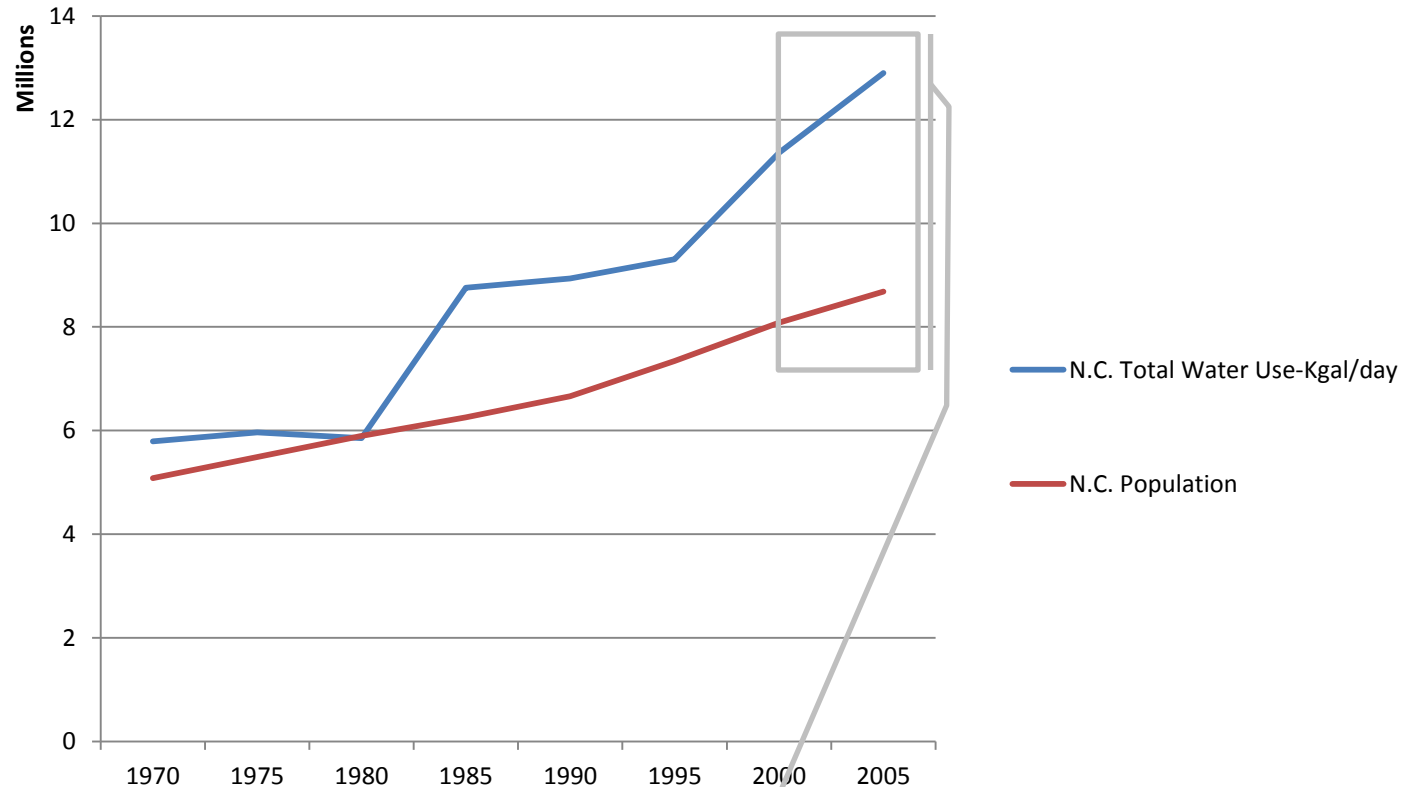
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# Water use is rising faster than population growth...

## N.C. Water Use vs. Population



*Fig. from 2008 WAS report, updated with final USGS water use data from 2005*



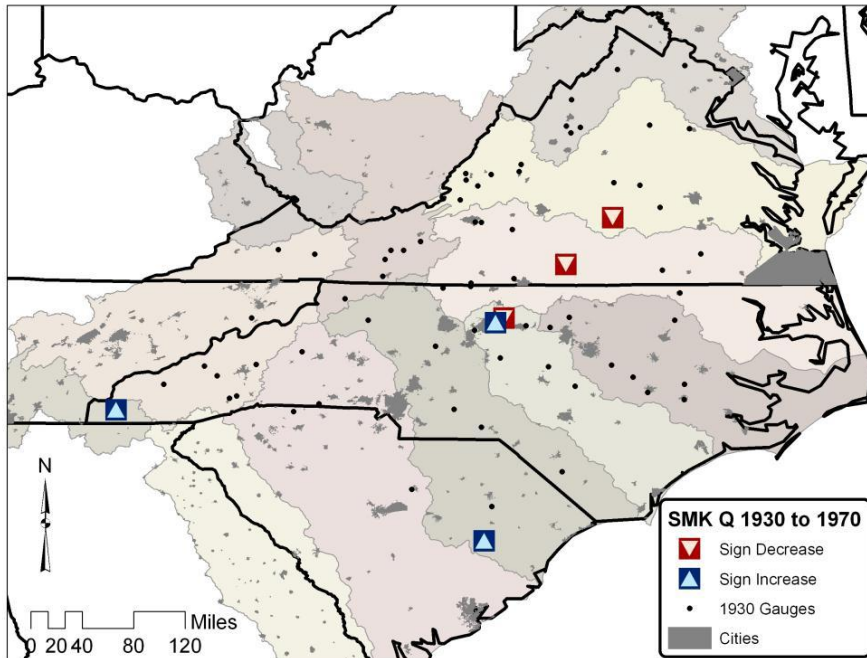
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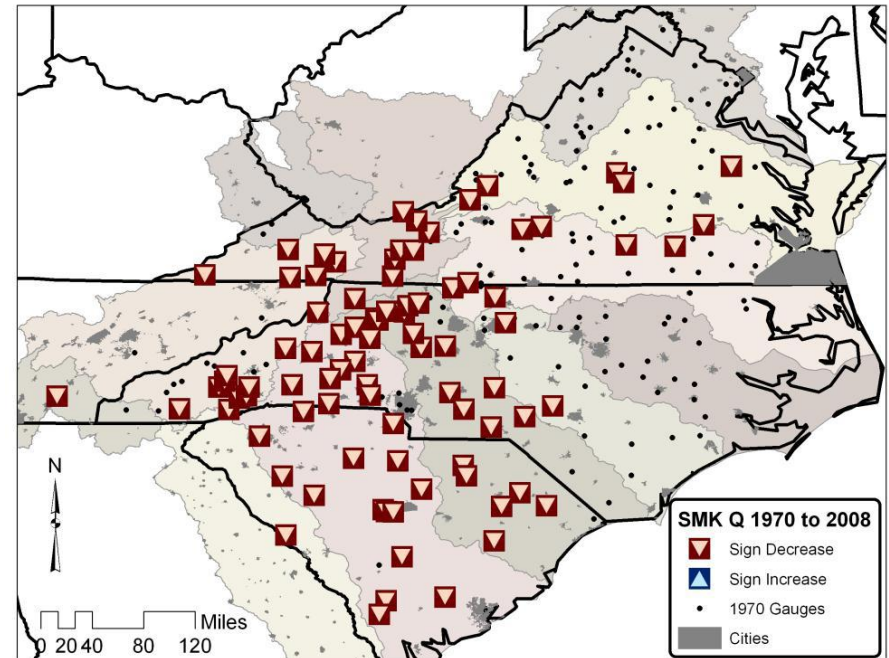
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# ...while supply is *finite* and quite possibly *shrinking*

1930-1970



1970-2008



## Changes in regional streamflow

Seasonal Mann Kendall statistic; statistically significant (inflated  $P < 0.05$  - more conservative) gauges have a direction, otherwise gauges are represented as a dot. Patterson, Lauren (UNC-CH, ongoing dissertation research 2010).



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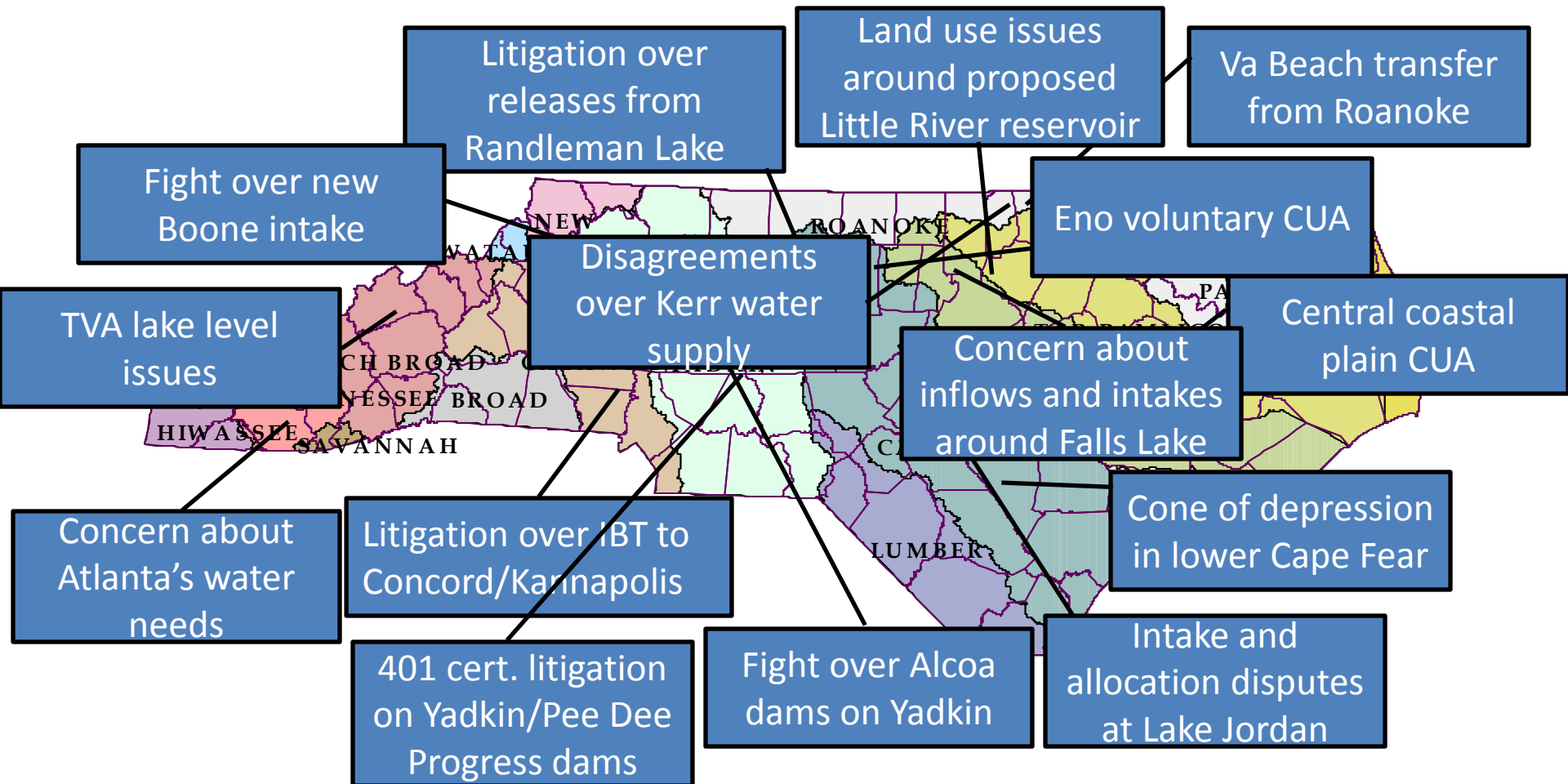
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# Shortfalls in water budgets vary widely

- **Duke Energy's Catawba/Wateree model:**  
*likely shortages in 30-40 years*
- **Neuse basin modeling results:** *“six systems may not be able to withdraw the amounts of water needed to fully meet their demands in the 2050 demand scenario [assuming historical flows continue]” (also not considering ecological flow needs or drought response plans)*
- **Yet other systems and users have adequate water**



# Water conflict is rising and will keep rising



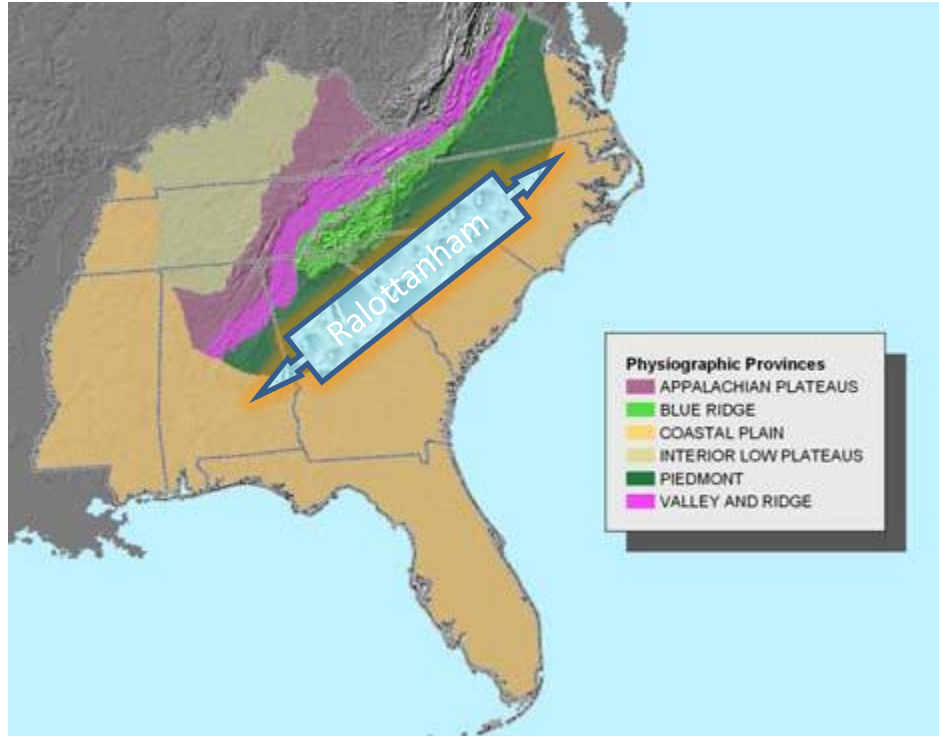
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# This is a shared problem across the southeast

A huge percentage of the South's population, growth and economic prospects lies in the piedmont . . .



. . . a region with good average precipitation, but small streams and low yields from groundwater.

Result: low resilience; high susceptibility to drought; almost certain escalation in conflict over water unless growth stops.



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# Southeast Water Update

- Georgia
  - State Water Plan Approved in 2008
  - Water Stewardship/Efficiency Act of 2010
  - 10 Water Planning Councils submitted regional plans to EPD in fall 2011
  - Conflict over agricultural withdrawals in the Flint River Basin



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# Southeast Water Update

- South Carolina
  - Rules proposed to implement SB 452, Water Withdrawal Permitting Act of 2010
  - Savannah River management w/ Georgia
- Virginia
  - Local/regional water supply plans submitted to DEQ
  - Interstate Commission on the Potomac River Basin
- Tennessee
  - Hydrologic models



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# Southeastern Drought

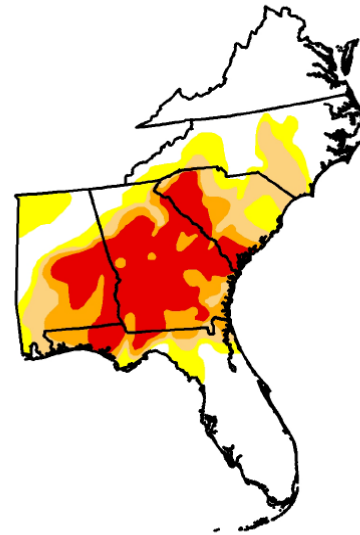
## U.S. Drought Monitor Southeast

November 1, 2011  
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	41.84	58.16	44.93	32.80	21.45	0.00
Last Week (10/25/2011 map)	43.36	56.64	42.52	31.27	21.45	0.00
3 Months Ago (08/02/2011 map)	18.12	81.88	61.00	40.94	22.04	0.93
Start of Calendar Year (12/28/2010 map)	23.01	76.99	51.84	23.55	5.63	0.00
Start of Water Year (09/27/2011 map)	42.24	57.76	41.82	31.77	23.48	0.00
One Year Ago (10/26/2010 map)	28.44	71.56	41.85	15.36	2.93	0.00

### Intensity:

 D0 Abnormally Dry	 D3 Drought - Extreme
 D1 Drought - Moderate	 D4 Drought - Exceptional
 D2 Drought - Severe	



The Drought Monitor focuses on broad-scale conditions.  
Local conditions may vary. See accompanying text summary  
for forecast statements.

<http://droughtmonitor.unl.edu>



Released Thursday, November 3, 2011  
Brian Fuchs, National Drought Mitigation Center



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# Currently, courts are not the best way to resolve these conflicts

- Riparian rights + present statutes: unpredictable results. Risky for major users.
- North Carolina could be not just a place of adequate precipitation and minimal regulatory intrusion, but also BEST IN CLASS GLOBALLY for water security.
- This will require changes in NC water law.



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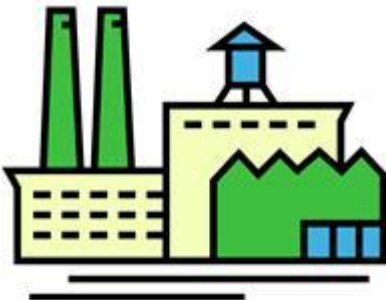


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# The best way: careful legislative work



Public water supply



Self supplied industry



Instream users



Agriculture



Electric utilities



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## We recommend...

- Continue to develop and update hydrologic models for each river basin per SL 2010-143
- Request reports on the Upper Neuse and Catawba-Wateree regarding future shortages
- Integrate water quality and quantity planning starting with the Neuse River Plan in 2012 and the Cape Fear River Plan in 2013



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# We recommend...

- Don't favor one set of users over another until we understand the “water budget” picture
- Work on design for multi-stakeholder process
  - Report for NC Chamber
  - AgH2O Update
  - Water utilities
  - Electric utilities
  - Conservation organizations



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# We recommend...

- Preserve and increase water storage
  - Acquire NC's share of Kerr Lake's water supply
  - Status of existing dams and reservoirs
  - Evaluate potential for off-line storage (GA)
  - Reduce sedimentation/preserve capacity
  - Direct DENR to consider stormwater capture and reuse as part of its stormwater regulatory programs
  - Provide authority to preserve reservoir sites



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# And finally we recommend

- Increase financial sustainability of public and private water utilities
  - Water rates
- Increase water efficiency
  - Water prices affect water consumption
  - High value water for high value uses
  - Reclaimed water is a resource
  - GA Water Stewardship Act
  - Stormwater for low value uses



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# Questions?



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